

**REMARKS**

Claims 1-6, 8-13 and 15-20 are pending in the application. Claims 5, 12 and 19 have been amended. Claims 7, 14 and 21 have been cancelled.

Applicant believes that this amendment addresses the Examiner's rejection and that any changes do not introduce new matter into the specification, limit the scope of the claims or result in any prosecution history estoppel. The Examiner has rejected claims 1-7 under 35 U.S.C. 102(b) as being anticipated by Dachiku et al. Applicant respectfully traverses the Examiner's rejection. In particular, Dachiku fails to teach or suggest a method of video coding wherein "estimating spatio-temporal rates of change in *intensity* at the selected feature points using at least two images from the sequence" (emphasis added) as claimed in claim 1 and amended claim 5, and the claims which depend there from.

As noted in the specification on page 10, middle paragraph:

The relationship between rate of change in intensity at the selected feature points and estimating the translation and rotation of the face is as follows. The gradient between two consecutive or immediately sequential frames is described as follows.

$$I_{XK} V_{XK} + I_{YK} V_{YK} + I_{TK} = 0$$

.....(1)

where  $I_{XK}$ ,  $I_{YK}$ , and  $I_{TK}$  are the rates of change at a selected pixel between the two frames  $k$  and  $(k+1)$  in the  $x$ -,  $y$ - and the temporal directions respectively and  $V_{XK}$ ,  $V_{YK}$  are optical flow fields in the  $x$  and  $y$  directions, respectively. The  $I_{XK}$  and  $I_{YK}$  are determined by the intensity gradients of the neighboring pixels in the same frame and  $I_{TK}$  is measured from the intensity gradient at substantially the same spatial position between consecutive frames. The equation is based on an assumption of brightness constancy for moving objects in the successive frames.

No where does Dachiku disclose estimating spatio-temporal rates of change in *intensity* at feature points. The Examiner's reference to column 10, lines 30-33 of Dachiku which states "...the vertices of the triangle must be shifted not only within the two-dimensional plane but also on the luminance scale" does not teach or suggest the claimed features.



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The Examiner also rejected claims 8-14 under 35 U.S.C. 103(a) as being unpatentable over Dachiku in view of Kang and claims 15-21 as being unpatentable over Dachiku in view of Kang and further in view of Szeliski. Applicant respectfully traverses the Examiner's rejection for the same reasons noted above. There is also no motivation to combine these references.

### CONCLUSION

In view of the foregoing, it is respectfully asserted that all of the claims pending in this patent application are in condition for allowance.

The required fee for a three month extension of time is enclosed. No additional fees are required for additional claims. Should it be determined that an additional fee is due under 37 CFR §§1.16 or 1.17, or any excess fee has been received, please charge that fee or credit the amount of overcharge to deposit account #02-2666.

If the Examiner has any questions, he is invited to contact the undersigned at (310) 252-7605. Reconsideration of this patent application and early allowance of all the claims is respectfully requested.

Respectfully submitted,

Sharon Wong  
Senior Patent Attorney  
Intel Corporation  
Reg. No. 37,760

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### CERTIFICATE OF MAILING

c/o Blakely, Sokoloff, Taylor & Zafman, LLP  
12400 Wilshire Blvd., Seventh Floor  
Los Angeles, CA 90025-1026  
310-207-3800

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage in an envelope addressed to: Mail Stop Fee Amendment, Commissioner for Patents, Post Office Box 1450, Alexandria, Virginia 22313-1450, on Oct. 16, 2003.

Margaux Rodriguez

October 16, 2003